

## Claims

1. A process for producing CMP-N-acetylneuraminic acid (CMP-NeuAc), which comprises adding yeast cells, N-acetylglucosamine-6-phosphate 2-epimerase (GlcNAc-6P 2-epimerase), N-acetylneuraminic acid lyase (NeuAc lyase), and CMP-N-acetylneuraminic acid synthase (CMP-NeuAc synthase) to a reaction system containing N-acetylglucosamine (GlcNAc), pyruvate, and cytidine 5'-monophosphate (CMP), and inducing reaction of the mixture.

2. The process according to claim 1, wherein the process comprises adding N-acetylglucosamine-6-phosphate 2-epimerase (GlcNAc-6P 2-epimerase) and N-acetylneuraminic acid lyase (NeuAc lyase) to a reaction system containing N-acetylglucosamine (GlcNAc) and pyruvate, to thereby synthesize N-acetylneuraminic acid (NeuAc), and subsequently adding, to the resultant reaction system, cytidine 5'-monophosphate (CMP), yeast cells, and cytidine 5'-monophosphate N-acetylneuraminic acid synthase (CMP-NeuAc synthase), to thereby synthesize CMP-N-acetylneuraminic acid (CMP-NeuAc).

3. The process according to claim 1, wherein cells (including transformants) or processed products thereof are employed as the GlcNAc-6P 2-epimerase, NeuAc lyase, or CMP-NeuAc synthase.

4. The process according to claim 1, which employs a transformant of GlcNAc-6P 2-epimerase and a transformant of NeuAc lyase, said respective transformants having enhanced activity, and a processed product of cells as the CMP-NeuAc synthase.

5. A process for producing CMP-N-acetylneuraminic acid (CMP-NeuAc), which comprises adding yeast cells, N-acetylglucosamine-6-phosphate 2-epimerase (GlcNAc-6P 2-epimerase), N-acetylneuraminic acid synthase (NeuAc synthase), and CMP-N-acetylneuraminic acid synthase (CMP-NeuAc synthase) to a reaction system containing N-acetylglucosamine (GlcNAc) and cytidine 5'-monophosphate (CMP), and inducing reaction of the mixture.

6. The process for producing CMP-N-acetylneuraminic acid (CMP-NeuAc) according to claim 1, wherein cells (including transformants) or processed products thereof are employed as the GlcNAc-6P 2-epimerase, NeuAc synthase, or CMP-NeuAc synthase.

7. The process according to claim 1, which employs a transformant of GlcNAc-6P 2-epimerase and a transformant of NeuAc synthase, said respective transformants having enhanced activity, and a processed product of cells having CMP-NeuAc synthase activity as the CMP-NeuAc synthase.